



PATENT  
Attorney Docket No. A-68718-3/RFT/RMS/RMK  
Dorsey File No. 463037-219

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

DOUNG et al.

Serial No.: 09/904,175

Filing Date: July 11, 2001

For: *DEVICES AND METHODS FOR  
BIOCHIP MULTIPLEXING*

Examiner: Forman, Betty J.

Art Unit: 1634

CERTIFICATE OF MAILING

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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicants wish to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying substitute for form PTO-1449. Copies of the references are enclosed herewith.

Further, in accordance with the provisions of 37 C.F.R. § 1.98(a)(3) and MPEP § 609(III)(A)(3), Applicant submits that reference nos. B3 and B5 are not in the English language and directs the Examiner's attention to the English language abstract of same for a concise statement as to its relevance.

Serial No.: 09/904,175  
Filing Date: July 11, 2001

None of the foregoing references is believed to disclose the invention as claimed.

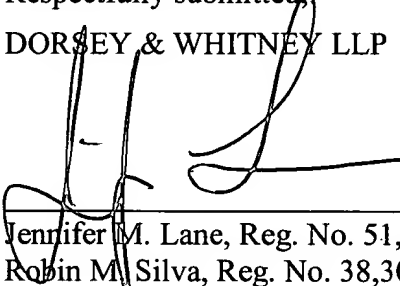
Nothing herein shall constitute an admission concerning the contents of any of the cited references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application. Submission of the present document shall not be construed as an admission that a search has been made or that better art does not exist.

Pursuant to 37 C.F.R. §1.97(c), enclosed is a check in the amount of \$180.00 as set forth in 37 C.F.R. §1.17(p). While no further fee is believed to be due, if this belief is in error, the Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2319 (Our Order No. 463037-219 (A-68718-3/RFT/RMS/RMK)).

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Dated: 11/19/03  
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Jennifer M. Lane, Reg. No. 51,916 for  
Robin M. Silva, Reg. No. 38,304

*Filed under 37 C.F.R. § 1.34(a)*

Customer Number: 32940

Attachments: Form PTO/SB/8A-B, Substitute for form PTO 1449  
159 References  
Check for \$180.00



Substitute PTO/SB/8A (08-00)

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<b>Substitute for form 1449A/PTO (Modified)</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Compleat if Known</b>	
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				Group Art Unit	1634
				Examiner Name	Forman, Betty J.
Sheet	1	of	7	Attorney Docket Number	A-68718-3/RFT/RMS/RMK

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	U.S. Patent Document Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	2,905,539	09-22-1959	Bowerman	
	A2	4,415,732	11-15-1983	Caruthers et al.	
	A3	4,713,347	12-15-1987	Mitchell et al.	
	A4	4,735,907	04-05-1988	Schaeffer et al.	
	A5	4,819,658	04-11-1989	Kolodner	
	A6	4,877,830	10-31-1989	Dobeli et al.	
	A7	4,920,047	04-24-1990	Giaever et al.	
	A8	5,032,216	07-16-1991	Felten	
	A9	5,106,751	04-21-1992	Newman	
	A10	5,110,745	05-05-1992	Kricka et al.	
	A11	5,156,810	10-20-1992	Ribi	
	A12	5,192,507	03-09-1993	Taylor et al.	
	A13	5,200,471	04-06-1993	Coleman et al.	
	A14	5,238,808	08-24-1993	Bard et al.	
	A15	5,259,926	11-09-1993	Kuwabara et al.	
	A16	5,262,035	11-16-1993	Gregg et al.	
	A17	5,296,375	03-22-1994	Kricka et al.	
	A18	5,304,487	04-19-1994	Wilding et al.	
	A19	5,308,754	05-03-1994	Kankare et al.	
	A20	5,320,725	06-14-1994	Gregg et al.	
	A21	5,324,457	06-28-1994	Zhang et al.	
	A22	5,438,607	08-01-1995	Przygoda, Jr. et al.	
	A23	5,486,335	01-23-1996	Wilding et al.	
	A24	5,491,097	02-13-1996	Ribi et al.	
	A25	5,498,392	03-12-1996	Wilding et al.	
	A26	5,512,131	04-30-1996	Kumar et al.	
	A27	5,585,069	12-17-1996	Zanzuchhi et al.	
	A28	5,585,646	12-17-1996	Kossovsky	
	A29	5,587,128	12-24-1996	Wilding et al.	
	A30	5,593,838	01-14-1997	Zanzucchi et al.	
	A31	5,603,351	02-18-1997	Cherukuri et al.	
	A32	5,632,876	05-27-1997	Zanzucchi et al.	
	A33	5,635,358	06-03-1997	Wilding et al.	
	A34	5,637,469	06-10-1997	Wilding et al.	
	A35	5,638,876	06-17-1997	Shimotoyodome et al.	

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	A36	5,643,738	07-01-1997	Zanzucchi et al.	
	A37	5,681,484	10-28-1997	Zanzucchi et al.	
	A38	5,726,026	03-10-1998	Wilding et al.	
	A39	5,747,169	05-05-1998	Fan et al.	
	A40	5,755,942	05-26-1998	Zanzucchi et al.	
	A41	5,763,191	06-09-1998	Knoll et al.	
	A42	5,770,029	06-23-1998	Nelson et al.	
	A43	5,783,056	07-21-1998	Hampp et al.	
	A44	5,795,953	08-18-1998	Kim et al.	
	A45	5,834,224	11-10-1998	Ruger et al.	
	A46	5,874,316	02-23-1999	Cornell et al.	
	A47	5,876,926	03-02-1999	Beecham	
	A48	5,922,183	07-13-1999	Rauh	
	A49	5,942,388	08-24-1999	Willner et al.	
	A50	5,942,397	08-24-1999	Tarlov et al.	
	A51	5,972,199	10-26-1999	Heller et al.	
	A52	5,989,402	11-23-1999	Chow et al.	
	A53	6,013,170	01-11-2000	Meade	
	A54	6,013,459	01-11-2000	Meade	
	A55	6,020,047	02-01-2000	Everhart	
	A56	6,050,719	04-18-2000	Winkler et al.	
	A57	6,054,277	04-25-2000	Furcht et al.	
	A58	6,060,023	05-09-2000	Maracas	
	A59	6,090,545	07-18-2000	Wohlstadter et al.	
	A60				
	A61	6,096,273	08-01-2000	Kayyem et al.	
	A62	6,096,497	08-01-2000	Bauer	
	A63	6,096,500	08-01-2000	Oprandy et al.	
	A64	6,096,561	08-01-2000	Tayi	
	A65	6,100,045	08-08-2000	Van Es	
	A66	6,100,099	08-08-2000	Gordon et al.	
	A67	6,132,685	10-17-2000	Kercso et al.	
	A68	6,211,356	04-03-2001	Wiessler et al.	
	A69	6,232,062	05-15-2001	Kayyem et al.	
	A70	6,232,310	05-15-2001	Hansen et al.	

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	A71	6,264,825	07-24-2001	Blackburn et al.	
	A72	6,265,155	07-24-2001	Meade et al.	
	A73	6,290,839	09-18-2001	Kayyem et al.	
	A74	6,291,188	09-18-2001	Meade et al.	
	A75	6,479,240	10-24-2002	Kayyem et al.	
	A76	6,495,323	12-17-2002	Kayyem et al.	
	A77	6,579,231	06-17-2003	Phipps	

FOREIGN PATENT DOCUMENTS						
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	B1	EP 0 637 996	07-23-1997	The Trustees of the University of Pennsylvania		
	B2	EP 0 637 998	07-31-1996	The Trustees of the University of Pennsylvania		
	B3	EP 0 439 036	07-31-1991	Hoffman La Roche	Abstract	
	B4	EP 0 478 319	04-01-1992	Toshiba		
	B5	EP 0 664 452 A2	07-26-1995	Boehringer Mannheim GMBH	Abstract	
	B6	WO 93/23425	11-25-1993	The Ontario Cancer Institute		
	B7	WO 95/34816	12-21-1995	Pharmacia Biosensor AB		
	B8	WO 95/35102	12-28-1995	Nexstar Pharmaceuticals, Inc.		
	B9	WO 96/10178	04-04-1996	Pharmacia Biosensor AB		
	B10	WO 96/15450	05-23-1996	David Sarnoff Research Center		
	B11	WO 96/15576	05-23-1996	David Sarnoff Research Center		
	B12	WO 96/39252	12-12-1996	David Sarnoff Research Center		
	B13	WO 96/39260	12-12-1996	David Sarnoff Research Center		
	B14	WO 98/05424	02-12-1998	Caliper Technologies Corp.		
	B15	WO 98/12539 A1	03-26-1998	Meso Scale Technologies, LLC		
	B16	WO 97/16561	05-09-1997	David Sarnoff Research Center		
	B17					
	B18	WO 97/27324	07-31-1997	David Sarnoff Research Center		
	B19	WO 97/37755	10-16-1997	Sarnoff Corporation		

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	B20	WO 97/43629	11-20-1997	Sarnoff Corporation		
	B21	WO 98/13683	04-02-1998	Sarnoff Corporation		
	B22					
	B23	WO 99/57317	11-11-1999	Clinical Micro Sensors		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T <sup>6</sup>
	C1	ALEXANDER, "Design and Synthesis of Macrocyclic Ligands and their Complexes of Lanthanides and Actinides", <i>Chem. Rev.</i> , 1995, 95: 273-342.				
	C2	ANNE, A. et al., "Synthesis of first ferrocene labeled dideoxynucleotide and its use for 3' redox end labeling of 5' modified single stranded oligodeoxyribonucleotides", <i>Bioconjugate Chem.</i> , 2001, 12:396-405.				
	C3	CHAIKEN et al., "Analysis of Macromolecular Interactions Using Immobilized Ligands", <i>Analytical Biochemistry</i> , 1992, 201: 197-210.				
	C4	CHE, G. et al., "Voltammetry of defect sites at a self-assembled monolayer on a gold surface", <i>J. of Electroanalytical Chemistry</i> , 1998, 456: 9-17.				
	C5	CODINGTON et al., "Nucleosides. XIII. Synthesis of 3'-Amino-3'-deoxy-arabinosyl-uracil via 2', 3' - Epoxy-lyxosyl Nucleosides"; <i>J. Org. Chem.</i> , 1962, 27:163-167.				
	C6	COLVIN et al., "Semiconductor Nanocrystals Covalently Bound to Metal Surfaces with Self-Assembled Monolayers", <i>J. Am. Chem. Soc.</i> , 1992, 114: 5221-5230.				
	C7	CONWAY, N.E. et al., "Site-specific attachment of labels to the DNA backbone", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. ed.), IRL Press, Oxford, pp. 211-239.				
	C8	DAVIS et al., "Continuous Liquid-Phase Piezoelectric Biosensor for Kinetic Immunoassays", <i>Anal. Chem.</i> , 1989, 61: 1227-1230.				
	C9	DELMARCHE, E. et al., "Immobilization of Antibodies on a Photoactive Self-Assembled Monolayer on Gold", <i>Langmuir</i> , 1996, 12: 1997-2006.				
	C10	DREYER, G.B. et al., "Sequence-specific cleavage of single-stranded DNA:Oligodeoxynucleotide-EDTA/FE(II)", <i>Proc. Natl. Acad. Sci. USA</i> , 1985, 82:968-972.				
	C11	DURHAM, B. et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives", <i>Advances in Chemistry Series</i> , 1990, 226:181-193.				
	C12	DWYER et al., "Structural Analysis of Covalent Peptide Dimers, Bis(pyridine-2-carboxamidonetropsin)(CH2) 3-6, in Complex with 5' -TGACT-3' Sites by Two Dimensional NMR", <i>J. Am. Chem. Soc.</i> , 1993, 115: 9900-9906.				
	C13	FLANAGAN et al., "Truncated staphylococcal nuclease is compact but disordered", <i>Proc. Natl. Acad. Sci. USA</i> , 1992, 89: 748-752.				
	C14	GAFNI et al., "Biomimetic Ion-Binding Monolayers on Gold and Their Characterization by AC-Impedance Spectroscopy", <i>Chem. Eur. J.</i> , 1996, 2: 759-766.				
	C15	GAIT, M.J., "Oligoribonucleotide Synthesis", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. Ed.), IRL Press, Oxford, pp. 25-48.				

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**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

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	C16	GAO et al., "Self-assembled conducting polymer monolayers of poly(3-octylthiophene) on gold electrodes", <i>Synthetic Metals</i> , 1995, 75: 5-10.	
	C17	GASSNER et al., "A test of the 'jigsaw puzzle' model for protein folding by multiple methionine substitutions within the core of T4 lysozyme", <i>Proc. Natl. Acad. Sci. USA</i> , 1996, 93: 12155-12158.	
	C18	GILLES et al., "Single nucleotide polymorphic discrimination by an electronic dot blot assay on semiconductor microchips", <i>Nature Biotechnology</i> , 1999, 17: 365-370.	
	C19	GLOVER et al., "Alternating current Polarography in the Harmonic Multiplex Mode", <i>Analytical Chemistry</i> , 1973, 45(11): 1869-1877.	
	C20	HAMILL et al., "The Effect of Boundry Selection on the Stability and Folding of the Third Fibronectin Type 111 Domain from Human Tenascin", <i>Biochemistry</i> , 1998, 37: 8071-7079.	
	C21	HESS et al., "Base Paiting Properties of Novel Transition Metal PNA Conjugates", <i>Journal of Inorganic Biochemistry</i> , 1999, 74:...	
	C22	HSUEH et al., "Electrochemically Directed Self-Assembly on Gold", <i>Angew. Chem. Int. Ed.</i> , 2000, 39(7): 1228-1230.	
	C23	JONSSON et al., "Biosensors based on surface concentration measuring devices - the concept of surface concentration," <i>Progr., Colloid &amp; Polymer Sci.</i> , 1985, 70: 96-100.	
	C24	KIRSCHENHEUTER et al., "An Improved Synthesis of 2' -Azido-2' -Deoxyuridine", <i>Tetrahedron Letter</i> , 1994, 35(46): 8517-8520.	
	C25	KRIDER, E.S., et al., "Automated Synthesis of 3' Metalated Oligonucleotides", <i>Inorg. Chem.</i> , 2001, 40: 4002-4009.	
	C26	KRIDER, E.S. and T.J. Meade, "Electron transfer in DNA: covalent attachment of spectroscopically unique donor and acceptor complexes", <i>JBIC</i> , 1998, 3: 222-225.	
	C27	KUMAR et al., "A Simple Method for Introducing -SH/COOH Group at 5' -CH end of Oligonucleotide", <i>Nucleosides &amp; Nucleotides</i> , 1992, 11(5): 999-1002.	
	C28	KUMAR et al., "Patterning Self-Assembled Monolayers: Applications in Materials Science", <i>Langmuir</i> , 1994, 10: 1498-1511.	
	C29	LABINIS et al., "Orthogonal Self-Assembled Monolayers: Alkanethiols on Gold and Alkane Carboxylic Acids on Alumina", <i>Reports</i> , August 25, 1989, pp. 845-847.	
	C30	LIU et al., "Passive mixing in a three dimensional serpentine microchannel", <i>J. Microelectromechanical Systems</i> , 2000, 9(2): 190-197.	
	C31	LOFAS et al., "A Novel Hydrogel Matrix on Gold Surfaces in Surface Plasmon Resonance Sensors for Fast and Efficient Covalent Immobilization of Ligands", <i>J. Chem. Soc. Chem. Commun.</i> , 1990, pp. 1526-1528.	
	C32	MCGOVERN et al., "Role of Solvent on the Silanization of Glass with Octadecyltrichlorosilane", <i>Langmuir</i> , 1994, 10: 3607-3614.	
	C33	MENGEL, R. et al., "A Simple Synthesis of 2'-Deoxy-2'-fluorocytidine by Nucleophilic Substitution of 2,2'-Anhydrocytidine with Potassium Fluoride/Crown Ether", <i>Angew. Chem. Intl. Ed. Engl.</i> , 1978, 17(7): 525.	
	C34	MILLER, N. et al., "Nucleosides. XXI. Synthesis of Some 3'-Substituted 2',3'-Dideoxyribonucleosides of Thymine and 5-Methylcytosine", <i>J. Org. Chem.</i> , Jan. 1964, 29: 1772-1776.	
	C35	MITSUI, T. et al., "Coumarin-fluorescein pair as a new donor-acceptor set for fluorescence energy transfer study of DNA", <i>Tetrahedron Lett.</i> , 2000, 41(15): 2605-2608.	
	C36	MUCIC et al., "Synthesis and Characterization of DNA with Ferrocenyl Groups Attached to their 5'-Termini: Electrochemical Characterization of a Redox-Active Nucleotide Monolayer", <i>Chem. Commun.</i> , 1996, pp. 555-557.	

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		Application Number	09/904,175		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Filing Date	July 11, 2001		
		First Named Inventor	D ung t al.		
		Group Art Unit	1634		
		Examiner Name	Forman, Betty J.		
Sheet	6	of	7	Attorney Docket Number	A-68718-3/RFT/RMS/RMK

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	C38	NAPIER et al., "Probing biomolecule recognition with electron transfer: electrochemical sensors for DNA hybridization", <i>Bioconjugate Chem.</i> , 1997, 8:906-913.	
	C39	O'DONNELL-MALONEY et al., "The development of microfabricated arrays for DNA sequencing and analysis", <i>Trends in Biotechnology</i> , 1996, 14(10):401-407.	
	C40	PARIKH et al., "An intrinsic relationship between molecular structure in self-assembled n-alkylsiloxane monolayers and deposition temperature", <i>J. Phys. Chem.</i> , 1994, 98: 7577-7590.	
	C41	PEARSON et al., "Approach to stereochemically defined cycloheptadiene derivatives using organoiron chemistry", <i>J. Am. Chem. Soc.</i> , 1983, 105: 4483-4484.	
	C42	PIEKEN, W.A. et al., "Kinetic Characterization of Ribonuclease-Resistant 2'-Modified Hammerhead Ribozymes", <i>Science</i> , July 1991, 253: 314-317.	
	C43	PLAXCO and DOBSON, "Time-resolved biophysical methods in the study of protein folding", <i>Curr. Opin. Struc. Biol.</i> , 1996, pp. 630-636.	
	C44	PLAXCO and GROSS, "The importance of being unfolded", <i>Nature</i> , 1997, 386: 657-659.	
	C45	PLAXCO et al., "Simplified proteins: minimalist solution to the 'protein folding problem'", <i>Curr. Op. Struct. Biol.</i> , 1998, 8: 80-85.	
	C46	PRIME et al., "Adsorption of Proteinsa onto Surfaces Containing End-Attached Oligo(ethylene oxide): A Model System using Self-Assembled Monolayers", <i>J. Am. Chem. Soc.</i> , 1993, 115: 10714-10721.	
	C47	SCHIERBAUM et al., "Molecular Recognition by Self-Assembled Monolayers of Cavitand Receptors", <i>Science</i> , September 2, 1994, <i>Science</i> , 265: 1413-1415.	
	C48	SEBESTA et al., "2'-Deoxy-2'-Alkoxyaminouridines: Novel 2'-Substituted Uridines prepared by Intramolecular Nucleophilic Ring Opening of 2,2' -O-Anydrouridines", <i>Tetrahedron</i> , Nov. 1996, 52(46): 14385-14402.	
	C49	SHNEK et al., "Specific Protein Attachment to Artificial Membranes via Coordination to Lipid-Bound Copper (II)", <i>Langmuir</i> , 1994, 10: 2382-2388.	
	C50	SINHA, N.D. and S. STRIEPEKE, "Oligonucleotides with reporter groups attached to the 5'-Terminus", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. ed.), IRL Press, Oxford, pp. 185-210.	
	C51	SLOOP et al., "Metalloorganic labels for DNA sequencing and mapping", <i>New. J. Chem.</i> , 1994, 18: 317-326.	
	C52	SPINKE et al., "Molecular Recognition at Self-Assembled Monolayers: The Construction of Multicomponent Multilayers", <i>Langmuir</i> , 1993, (9): 1821-1825.	
	C53	SPINKE et al., "Molecular Recognition at self-assembled monolayers: Optimization of surface functionalization", <i>J. Chem. Phys.</i> , November 1, 1993, 99(9): 7012-7019.	
	C54	SPROAT, B.S. and A.I. LAMOND, "2-O-Methyloligoribonucleotides: synthesis and applications", <i>In Oligonucleotides and Analogues: A Practical Approach</i> , 1991, (Eckstein, F. ed.) IRL Press, Oxford, pp. 211-239.	
	C55	STENBERG et al., "Quantitative Determination of Surface Concentration of Protein with Surface Plasmon Resonance Using Radiolabeled Proteins", <i>Journal of Colloid and Interface Science</i> , 1991, 143(2): 513-526.	
	C56	UTO, Y. et al., "Electrochemical Analysis of DNA amplified by the Polymerase Chain Reaction with a Ferrocenylated Oligonucleotide", <i>Anal. Chem.</i> , 1997, 250: 122-124.	
	C57	UVERSKY et al., "Effect of Natural Ligands on the Structural Properties and Conformational Stability of Proteins", <i>Biochemistry (Moscow)</i> , 1998, 63: 420-433.	

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